

ABSTRACT

A method of manufacturing thermosets such as epoxy resins includes adding expandable hollow microspheres, which expand with temperature as shown in the accompanying graph, to the base thermoset components in the liquid phase and applying
5 heat treatment to the mixture so formed causing the microspheres to expand during or after curing of the thermoset. This results in a toughening mechanism caused by compressive residual stress around the microspheres which significantly increases the specific fracture energy of the epoxy resin.

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Figure 1